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<b>Notice of Allowability</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/820,771		MATSUSHITA ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Ernest Unelus		2828	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 04/09/2004.
2. ☒ The allowed claim(s) is/are 1-86.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                                                            |                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>04/09/2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                 | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|                                                                                                                                            | 9. <input type="checkbox"/> Other _____.                                               |

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Lytle on 02/06/06.

In claim 1, at line 8, after "diode", --- which is greater than zero--- has been added.

In claim 1, at line 9, after "light ", --- which is greater than zero--- has been added.

In claim 1, at line 10, after "fiber ", --- which is greater than zero--- has been added.

In claim 1, at line 9, after " $L_{Beat\ 1}$  ", --- which is greater than zero--- has been added

In claim 7, at line 8, after "diode", --- which is greater than zero--- has been added.

In claim 7, at line 9, after "light ", --- which is greater than zero--- has been added.

In claim 7, at line 10, after "depolarizer ", --- which is greater than zero--- has been added.

In claim 7, at line 9, after " $L_{Beat\ 2}$ ", --- which is greater than zero--- has been added.

In claim 30, at line 2, after "fiber", --- which is greater than zero--- has been added.

In claim 56, at line 2, after "fiber", --- which is greater than zero--- has been added.

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In claim 70, at line 2, after "fiber", --- which is greater than zero--- has been added.

In claim 81, at line 2, after "fiber", --- which is greater than zero--- has been added.

### ***Allowable Subject Matter***

Claims 1-86 are allowed.

1 The following is an examiner's statement of reasons for allowance: The prior art of record fails to disclose " wherein a length  $L_{\text{Pig}}$  of the polarization maintaining fiber is a value obtained by calculation of equation 1 with use of a longitudinal mode spacing  $\Delta\lambda$  of output light from the laser diode, an oscillating center wavelength  $\lambda_0$  of the laser light, a beat length  $L_{\text{beat } 1}$  of the polarization maintaining fiber and an optical wavelength  $\lambda_{\text{Beat}}$  used in a measurement of the beat length  $L_{\text{Beat } 1}$ .  $L_{\text{Pig}} < (\lambda_0^2 / \Delta\lambda) (L_{\text{beat } 1} / \lambda_{\text{Beat } 1})$  " (claim 1) and "wherein a length  $L_{\text{Depo}}$  of the depolarizer is a value obtained by calculation of equation 4 with use of a longitudinal mode spacing  $\Delta\lambda$  of output light from the laser diode, an oscillating center wavelength  $\lambda_0$  of the laser light, a beat length  $L_{\text{beat } 2}$  of a birefringent material used in said depolarizer and an optical wavelength  $\lambda_{\text{Beat } 2}$  used in a measurement of the beat length  $L_{\text{Beat } 2}$ .  $L_{\text{Depo}} < (\lambda_0^2 / \Delta\lambda) (L_{\text{beat } 2} / \lambda_{\text{Beat } 2})$  " (claim 7). The remains 2-6 and 8-86 are allowed by virtue of their dependencies on the independent claims. Hence, the examiner has allowed claims 1-86.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

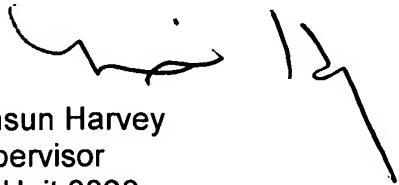
Matsushita et al. (US pub. 20040109230) discloses an Optical signal amplifier.

Akasaka et al. (US pat. 6,775,057) discloses Raman amplifier, optical repeater, and Raman amplification method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernest Unelus whose telephone number is 571-272-8596. The examiner can normally be reached on 9am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Minsun Harvey  
Supervisor  
Art Unit 2828